

AGRICULTURE

RELATION OF THE EXPERIMENT STATION TO THE FARMER

Written for the Desert Farmer,
By L. A. M.

The changes that have taken place in nearly all branches of productive industry during the last few years have been as noticeable in the farmer's occupation as in any other. It has been but a very few years since it was thought that farming differed from other occupations in that it required no preparation; in short, that any one who failed in other branches of industry could farm successfully. In the East it has been but a very few years that farmers' institutes have been successful, and in the West, meetings for the discussion of strictly agricultural topics are comparatively a new departure. The farmers themselves have heretofore taken but very little interest in such matters for the necessity of knowing anything in their business beyond the ability to plant, cultivate and harvest a crop had not dawned upon them to any appreciable extent. Of late, however, there has been an awakening, and we are coming to a realization of the importance of intelligent action in all the details of agriculture if the farmer would succeed. The time has passed when successful farmers sneer at book-farming, and today the successful farmer is willing to receive aid in his work no matter from what legitimate source it originates. The conditions that confront the farmer and the difficulties that beset his path, present problems which are too complex for his unaided solution. The farmers in the past in Utah, under the favorable circumstances that have surrounded them, secured good crops. The yield of crops for last year indicates that there has been intelligent planning and wise cooperation in our farm work. In the production of potatoes last year Utah ranked ninth in yield per acre, her average yield being 120 bushels. Wheat the average yield in Utah was 20.7 bushels per acre while the average for the United States

was but 12.27. Oats in Utah 34, bushels, United States 30.23. In the production of hay Utah leads with an average yield of 2.5 tons per acre, the average for the United States being but 1.35 tons. These figures are but an indication of the agricultural possibilities of our State. But it is not believed that even with these very gratifying statistics the agriculture of Utah has reached the limit of perfection, and the State of Utah for the advancement of her agricultural interests, has established within her borders an agricultural experiment station.

The agricultural station in this state and in other states of the Union has developed from small beginnings. They are the result of the formation of agricultural societies in Germany, which hoped thereby to advance the cause of agriculture. The first Experiment station in the United States was organized at Middletown, Conn., and today upwards of one million dollars are spent in the United States annually in agricultural experimentation and investigation. But what I desire especially to do in this paper is to call your attention to the fact that you have here within the borders of this State a station which receives annually from the U. S. Government \$30,000 that it might investigate and study those problems which are too complex for the unaided farmer to accomplish alone. I am of the opinion, however, that the farmers fail to appreciate the value of the Station and fail to appreciate the help they may receive if they so desire. Farmers should feel an interest in calling upon their experiment stations for information in any critical matter that may arise in farm practice, and the Experiment Station should advise the farmer on all general questions pertaining to the farm. A broad field is here represented but it requires cooperation on the part of both if the work be effective.

Every subject with which the practical farmer of today has to deal is receiving the attention of one or

more of the experiment stations on this continent. Selection and preservation of seed, feeding and care of stock, investigation of animal diseases, dairy and poultry problems, methods of tillage and cultivation of soils, are some of the practical subjects being investigated. Practical experiments along any of these lines require great care and accuracy in order to have the results reliable and useful. Many of the experiments in progress at the Station require long periods to establish certain facts under consideration, and these experiments are often very expensive, but the results very often are of national importance. But in the meantime there needs to be done a great deal of work which will be of immediate benefit to the farmers. This latter work will be more along the lines of instruction than investigation for the Station, but would often save the farmer a great deal of time and expense to find the information wanted. There must, however, as I have already said, be a greater interest taken by the farmers themselves in these inquiries before any station, however zealous the workers in that station may be, can be of the greatest value to those in whose interest it was established. I have often in the past few years heard people express themselves who entertained very grave doubts as to whether the experiment stations were securing results commensurate with the cost. If the experiment stations had done nothing else than furnish to the world the Babcock test they would have placed a large credit to their account. It is true that there have been very few discoveries made by the Station workers that rise to the importance of the one made by Dr. Babcock, yet in the long line of researches that bear upon the economy of stock feeding, upon the composition and use of formulae which will enable us to rid ourselves of fruit pests, upon the saving and application of manures, upon the relation of food to the composition of animals, upon tests of mechanical appliances for all parts of the farm; upon questions of seeding and harvesting of crops, and upon various other questions, the stations have given useful information, which while in their nature are not startling or

will have a tendency to revolutionize farming, yet have been of great assistance to the farmer in enabling him to make his practice more precise.

Increased knowledge in any domain of agriculture may materially affect the income of the nation. Thus any process that will increase the crop of corn by one per cent will make an increase of 20 millions of bushels in the United States.

The kinds of work which the experiment stations are doing may be grouped in three classes; First, experiments that are somewhat simple in nature, as variety tests of plants and seeds, field experiments with crops, the study of actual feeding practices of the farmers, etc. These simple problems are really experiments in practical agriculture, and while they have brought results of considerable value, are not to be reckoned among the best work which the experiment stations are doing. Second, there is the work of disseminating information on farm problems, a work which requires a great deal of time, and, 3rd, there are more complicated investigations under way, such as digestion experiments, the study of plant diseases, insects injurious to vegetation, problems the results of which are of much greater importance than those of the simpler kinds. It is not always an easy matter to see the practical results of these works of investigation: for instance when the Experiment Station in Connecticut was making the experiment upon the acquisition of nitrogen from the air, by growing plants, it seemed to the ordinary observer a waste of money for men of fairly large salaries to spend their time washing and burning ordinary sea sand, and planting the seed in the soil thus prepared, but the result of that experiment is of inestimable value to the farmer. They learned that some plants possess and that some plants do not possess the property of acquiring nitrogen from the atmosphere. This discovery is of importance because we now know why certain crops do not draw certain important plant foods from the soil but rather leave the soil in better condition than it was when sown.

Our own experiment station has endeavored to keep in touch with the